Installing Active Airflow Manager

Complete these instructions to install a pressure-based active airflow manager (AAM) within a Wright Line heat containment system (HCS) equipped enclosure. Each kit contains a controller, side intake with seals, bottom intake, and fasteners. These instructions apply to the following Wright Line item numbers and controller models:

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCSAFMEENKIT</td>
<td>Ethernet-enabled airflow controller with network terminators manages up to 256 total controllers with one IP address</td>
</tr>
<tr>
<td>HCSAFMCLNTKIT</td>
<td>Stand-alone or networkable airflow controller</td>
</tr>
<tr>
<td>HCSALRM</td>
<td>Audible alarm with cable (optional)</td>
</tr>
</tbody>
</table>

Serial/RS-232 cable (optional)

Prerequisites

- An HCS chimney base with fan kit installed on a Paramount or Vantage enclosure, or comparable third party enclosure.
- Two isolated PDUs or power sources (200-240VAC).
- Unpack all components.
- Indelible marker.
- Make sure you have common installation tools including a utility knife or scissors and #2 Philips screwdriver.
- Wright Line Aura software.
- Wright Line Active Airflow Manager Aura User Guide.
AAM configuration rationale

The active airflow manager (AAM) can be set up using multiple configurations:

- **HCSAAMCLNT** (client version) can manage the active airflow option of the heat containment chimney base (HCS) as a standalone AAM (standalone configuration) and monitor/configure via a built-in mini-GUI or by serial cable connection via the Wright Line Aura GUI. The client versions can also be connected to an Ethernet-enabled version AAM in a master configuration using RS-485 daisy-chained connections.

- **HCSAAMEEN** (Ethernet-enabled version) can be utilized as a standalone AAM (standalone configuration) or as a conduit for a single point of communication for many AAMs via a single IP address (master configuration) using the Wright Line Aura GUI. The AAMs that connect in a standalone configuration will manage much like a client version with the added capability of connecting to a network and the ability to manage all AAMs connected to it in a master configuration.

**Note:** In master configuration you must end the daisy-chain of the RS-485 connection with the supplied network terminator cables.
Mount controller to HCS

Complete the following steps to attach the controller to the inside of the HCS.

1. Remove the two upper covers from the rear of the HCS chimney base. The second cover is secured with four (4) screws.
2. Remove the knockouts from the back of chimney base as shown.
3. Line up tool-less buttons on the back of controller with the knockout holes inside the chimney base as shown. Insert buttons through the knockout holes and press down firmly to seat the buttons in the keyholes.
4. Slide each EC fan into the controller, making sure they are both firmly seated.
5. Place the connector identifier label on the interior rear wall of the HCS chimney base under the controller.
6. Replace two upper covers from the rear of the chimney base.
Connect cables and peripherals

Complete the following steps to integrate cables and peripherals into an HCS enclosure.

1. Place the LED indicator label on front of the panel as shown.

2. Place the LED status code label on front of the panel below the LED lights as shown.

3. Knock out the LED holes on the rear of the HCS chimney base. If you are installing the optional buzzer, remove this knockout at the same time.

4. Insert three (3) LED panel-mount clips into the LED knockout holes from the outside.

5. Insert tri-colored LEDs (visibly white) into the two top holes. The left fan is in the top position and the right fan is in the middle position. Insert red “blown fuse” LED into the bottom hole. LEDs are inserted from the inside of the chimney base. Dress the hanging cables to the side walls of the chimney base with the provided clips.

6. If you are installing the optional buzzer, unscrew the bezel from the piezo buzzer and insert through buzzer knockout. Screw the bezel onto the buzzer to attach it to the chimney base. Dress the hanging cables to the side walls of the chimney base with the provided clips.
7. Place the connection description label on the back of the controller as shown.
8. Plug the LED/temperature sensor cable into the first location as labeled.
9. Temperature probes can be placed anywhere temperature readings are needed. Wright Line recommends placing one in the cold air intake aisle (cold aisle) and one in the hot air exhaust aisle (hot aisle).
10. **Optional piezo/relay cable:** Connect the cable to third location as shown. For integration of relays see pin out chart on last page.

11. Center a pressure sensor vertically on either of the front (cold aisle) rails and mount with 2 screws (and cage nuts if using square-holed mounting rails). Check the “baseline” box on the label with an indelible marker. Attach the pressure sensor tube to the baseline pressure sensor port on the controller.
12. Center a pressure sensor vertically on either of the rear (hot aisle) rails and mount with 2 screws (and cage nuts if using square-holed mounting rails). Check the “control” box on the label with an indelible marker. Attach the pressure sensor tube to the control pressure sensor port on the controller.
Connect power

Complete the following steps to connect power cables to the AAM.

1. Install the redundant power strain relief bracket with three (3) #10 KEP nuts and flat washers.
2. Secure the plastic strain relief clip to each power cable and secure to the strain relief bracket.
3. Connect both AC power cords to the AAM.
4. Connect each AC cable plug end to two separate isolated circuits.

Device connectivity options

To configure and monitor an Ethernet-enabled AAM, refer to Ethernet section of the Active Airflow Manager Aura Software User Guide.

To configure and monitor the airflow manager using serial/RS-232 communication refer to serial section of the Active Airflow Manager Aura User Guide.

For multiple units, refer to RS-485 section of the Wright Line Active Airflow Manager Aura User Guide.
LED status codes

LED Status
LED Fan Status
- Fan / System OK
- Fan / System Calibrating
- Over Temperature
- Thermistor Failure
- Unable to Obtain Pressure
- Critical Fan Failure
- Power Interrupted – Check Power

LED Fuse Status
- Fuse(s) Blown
- Fuse(s) OK

Relay integration

Piezo/Relay Pin Out Configuration
Connector Type: DB9

<table>
<thead>
<tr>
<th>Pin Number</th>
<th>Signal</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Common</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Normally Closed</td>
<td>Relay 1</td>
</tr>
<tr>
<td>3</td>
<td>Normally Open</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Common</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Normally Closed</td>
<td>Relay 2</td>
</tr>
<tr>
<td>9</td>
<td>Normally Open</td>
<td></td>
</tr>
</tbody>
</table>

Load
- Resistive load (p.f. = 1)
- Inductive load (p.f. = 0.4, L/R = 7ms)

Rated load
- 0.50 A at 125 VAC, 1A 24 VDC

Contact material
- Ag (Au clad)

Carry current
- 2 A

Max. operating voltage
- 125 VAC, 60 VDC

Max. operating current
- 1 A

Max. switching capacity
- 62.50 VA, 30W

Min. permissible load
- 1 mA, 5 VDC
Static IP address setting for RS-485 communication

RS-485 communication requires a static IP address at each AAM. The conduit for single point of communication, in master configuration, is always zero (0).

When setting the static IP address for each AAM client, or Ethernet-enabled unit used as a client, the IP address sequence must be continuous. The AAM units do not need to be physically arranged by IP address, but all IP addresses in the range must be connected.

If the installation includes 10 total AAM units in IP range of 192.9.9.x, the master is 192.9.9.0. The AAM clients must be 192.9.9.1, 192.9.9.2, 192.9.9.3 and so on through 192.9.9.9.

An 8 position DIP switch is used for binary communication. Position 8 is the least significant digit. Position 1 is the most significant digit.

<table>
<thead>
<tr>
<th>Position</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>128</td>
<td>64</td>
<td>32</td>
<td>16</td>
<td>8</td>
<td>4</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

The binary switch is used to set the last number of the static IP address. Factory settings are zero (0) for all AAM units.

Example binary switch settings:

Active airflow manager installation is complete.